

We Claim:

1. A polyvinyl chloride (PVC) fiber for artificial hair having an arithmetic mean roughness  $R_a$  of 0.18-0.38 $\mu\text{m}$  and a maximum height  $R_y$  of 0.5-3.5 $\mu\text{m}$  along a longitudinal direction, specified by JIS B 0601, said PVC fiber being manufactured by melt spinning a PVC resin composition with a nozzle, wherein said nozzle has a nozzle hole having a diameter  $D$  and a land length  $L$ , and a nozzle leading portion having a cone angle, and wherein a ratio of  $L/D$  is 1-3, a height of the nozzle leading portion is at least 4mm, and the cone angle is 20°-90°.

2. The PVC fiber as claimed in claim 1 having a section specified by  $(L \cdot M_{\text{max}})/S$  of 4.2-7.0, wherein  $M_{\text{max}}(\text{mm})$  is the maximum line segment,  $S(\text{mm}^2)$  is a sectional area, and  $L(\text{mm})$  is a length of an outer circumference.

3. The PVC fiber as claimed in claim 1 or 2, wherein said PVC resin composition contains 100 parts by mass of a PVC resin, (a) 0.3-3.0 parts by mass of a higher fatty acid ester lubricant, (b) 0.3-1.5 parts by mass of a polyethylene lubricant, with a mixing ratio (a)/(b) of 0.5-4.

4. The PVC fiber as claimed in any one of claims 1-3, wherein said PVC resin composition contains 0.2-5.0 parts by mass of an inorganic thermal stabilizer selected from a hydrotalcite or zeolite.

5. A method of manufacturing a polyvinyl chloride (PVC) fiber for artificial hair, comprising the steps of:

melt spinning a PVC resin composition with a nozzle having a nozzle hole of a diameter  $D$  and a land length  $L$ , and a nozzle leading portion having a cone angle, wherein a ratio of  $L/D$  is 1-3, a height of the nozzle leading portion is at least 4mm, and the cone angle is 20°-90°; and

discharging the PVC resin composition with an amount of 65-165g/h per nozzle.

6. The method as claimed in claim 5, wherein said PVC resin composition contains 100 parts by mass of a PVC resin, (a) 0.3-3.0 parts by mass of a higher fatty acid ester lubricant, and (b) 0.3-1.5 parts by mass of a polyethylene lubricant, with a mixing ratio (a)/(b) of 0.5-4.

7. The method as claimed in claim 5 or 6, wherein said PVC resin composition contains 0.2-5.0 parts by mass of an inorganic thermal stabilizer selected from a hydrotalcite or zeolite.

8. The method as claimed in any one of claims 5-7, further comprising the step of discharging the PVC resin composition with an amount of 80-150g/h.

9. A melt spinning apparatus for manufacturing a polyvinyl chloride fiber for artificial hair, having a nozzle, said nozzle comprising:

a nozzle hole having a diameter D and a land length L; and

a nozzle leading portion having a cone angle,

wherein a ratio of L/D is 1-3, a height of the nozzle leading portion is at least 4mm, and the cone angle is 20°-90°.